

MATERIAL SAFETY DATA SHEET- 330 B CURING AGENT

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HAZARD RATINGS:

ACUTE HEALTH 3	FIRE 1	REACTIVITY 0	HAZARD RATING - LEAST-0 SLIGHT-1 MODERATE-2 HIGH-3 EXTREME- 4
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SECTION I**PRODUCT NAME: 330 B, CURING AGENT**

C.A.S. CHEMICAL NAME: MIXTURE
CHEMICAL FAMILY: ALIPHATIC AMINE

SECTION II-A**PRODUCT / INGREDIENTS**

NO.	COMPOSITION	CAS NUMBER	PERCENT
P	330 B CURING AGENT	MIXTURE	100
1	N-AMINOETHYL PIPERAZINE	40-31-8	**
1A	DIETHYLENETRIAMINE	111-40-0	<
2	NONYL PHENOL	84852-15-3	**

*COMPONENT 1A IS AN IMPURITY IN COMPONENT 1

**THIS EPOXY RESIN HARDENER IS A MIXTURE OF THE ABOVE TWO COMPONENTS. THE PERCENTAGE OF EACH OF THESE INGREDIENTS IS PROPRIETARY INFORMATION IN ACCORDANCE WITH 29 CFR 1910.1200.

SECTION II-B**ACUTE TOXICITY DATA**

NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
P	NO DATA AVAILABLE		
1	2.5 G/K (RAT)	880 MG/KG (RABBIT)	NO DATA AVAILABLE
1A			>300 PPM/8H (RAT)
2	1.3 G/KG (RAT)	2.0 G/KG (RABBIT)	>2 MG/L (RAT)

SECTION III**HEALTH INFORMATION**

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

EYE CONTACT

CORROSIVE TO THE EYES AND MAY CAUSE SEVERE DAMAGE INCLUDING BLINDNESS. VAPORS MAY BE IRRITATING.

SKIN CONTACT

CORROSIVE TO THE SKIN. MAY CAUSE SKIN SENSITIZATION. MAY BE TOXIC IF ABSORBED THROUGH SKIN.

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WAYZATA, MN 55391**SECTION III (CONT.)****HEALTH INFORMATION****INHALATION**

VAPORS / MIST MAY BE CORROSIVE TO UPPER RESPIRATORY TRACT. REPEATED EXPOSURE CAN RESULT IN LUNG DAMAGE. MAY CAUSE RESPIRATORY TRACT SENSITIZATION. MAY BE TOXIC IF INHALED.

INGESTION

CORROSIVE AND MAY CAUSE SEVERE AND PERMANENT DAMAGE TO MOUTH, THROAT AND STOMACH. MAY BE MODERATELY TOXIC IF SWALLOWED.

SIGNS AND SYMPTOMS

IRRITATION AS NOTED ABOVE. LUNG DAMAGE (SCARRING, BRONCHITIS, EMPHYSEMA) MAY BE EVIDENCED BY SHORTNESS OF BREATH, ESPECIALLY ON EXERTION, AND MAY BE ACCOMPANIED BY CHRONIC COUGH. SKIN SENSITIZATION (ALLERGY) MAY BE EVIDENCED BY RASHES, ESPECIALLY HIVES. RESPIRATORY TRACT SENSITIZATION (E.G., ALLERGY, ASTHMA) MAY BE EVIDENCED BY WHEEZING WITH SHORTNESS OF BREATH AND COUGH.

AGGRAVATED MEDICAL CONDITIONS

PREEXISTING EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT. PREEXISTING SKIN OR RESPIRATORY TRACT ALLERGIES MAY INCREASE THE CHANCE OF DEVELOPING INCREASED ALLERGY SYMPTOMS FROM EXPOSURE TO THIS PRODUCT.

SECTION IV**OCCUPATIONAL EXPOSURE LIMITS**

NO.	PEL/TWA	OSHA	PEL/ CEILING	TLV / TWA	ACGIH	TLV / STEL	OTHER
P	NONE ESTABLISHED						
1	NONE ESTABLISHED						
1A	1 PPM			1 PPM (SKIN)*			
2	NONE ESTABLISHED						

* THE SKIN NOTATION INDICATES THE SUBSTANCE MAY BE ABSORBED THROUGH THE SKIN, MUCOUS MEMBRANES, OR EYES, BY DIRECT OR AIRBORNE EXPOSURE, AND SUGGESTS THAT APPROPRIATE MEASURES BE TAKEN TO PREVENT SUCH ABSORPTION SO THAT THE EXPOSURE LIMIT IS NOT INVALIDATED.

SECTION V**EMERGENCY AND FIRST AID PROCEDURES****EYE CONTACT**

IMMEDIATELY FLUSH WITH LARGE AMOUNT OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. RINSE CONTINUOUSLY WITH WATER WHILE ON WAY TO MEDICAL ATTENTION.

SKIN CONTACT

IMMEDIATELY REMOVE CONTAMINATED CLOTHING AND SHOES, WIPE EXCESS FROM SKIN AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. USE SOAP IF READILY AVAILABLE., OR FOLLOW BY THOROUGHLY WASHING WITH SOAP AND WATER. DO NOT REUSE CLOTHING UNTIL THOROUGHLY DECONTAMINATED. DESTROY LEATHER ARTICLES. GET MEDICAL ATTENTION.

INHALATION

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GET MEDICAL ATTENTION

INGESTION

DO NOT INDUCE VOMITING. GIVE ONE GLASS OF WATER UNLESS VICTIM IS DROWSY, UNCONSCIOUS, OR CONVULSING. GET MEDICAL ATTENTION IMMEDIATELY.

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SECTION VI**SUPPLEMENTAL HEALTH INFORMATION**

COMPONENT 1: N-AMINOETHYL PIPERAZINE (AEP) WAS FOUND TO BE POSITIVE IN THE CELL TRANSFORMATION GENETIC TOXICITY ASSAY AND NEGATIVE IN MOUSE LYMPHOMA GENETIC TOXICITY ASSAY.

IT HAS BEEN GENERALLY OBSERVED IN ANIMAL STUDIES THAT ALIPHATIC AMINE CAN CAUSE CHANGES IN THE LUNGS, LIVER, KIDNEYS AND HEART.

COMPONENT 2: 4-NONYL PHENOL IS THE SUBJECT OF A TCSA CONSENT ORDER WHICH REQUIRES CERTAIN CHEMICAL FATE AND ENVIRONMENTAL EFFECT TESTS.

COMPONENT 3: ALTHOUGH THE SIGNIFICANCE IS UNKNOWN, DIETHYLENETRIAMINE (DETA) HAS BEEN FOUND TO INCREASE THE FREQUENCY OF SISTER CHROMATID EXCHANGE. IT WAS ALSO FOUND TO BE POSITIVE IN THE UNSCHEDULED DNA MUTAGENICITY ASSAY. MICROBIAL TESTS AND IN VITRO GENE MUTATION ASSAY WERE NEGATIVE. A LIFETIME SKIN PAINTING STUDY IN MICE DID NOT RESULT IN CARCINOGENICITY. HISTOPATHOLOGICAL EFFECTS OF THE KIDNEY, LIVER, SPLEEN AND ADRENAL WERE OBSERVED IN TWO RAT LIFETIME FEEDING STUDIES.

SECTION VII**PHYSICAL DATA**

BOILING POINT: >432°F (>222°C)

SPECIFIC GRAVITY: 0.97 (H₂O=1)

VAPOR PRESSURE: <1.0 @ 20°C

MELTING POINT: NOT AVAILABLE

SOLUBILITY: PARTIAL (IN WATER)

VAPOR DENSITY: NOT AVAILABLE

EVAPORATION RATE (n-BUTYL acetate =1): NOT AVAILABLE

APPEARANCE AND ODOR: CLEAR LIGHT COLORED LIQUID WITH AMINE ODOR.

SECTION VIII**FIRE AND EXPLOSION HAZARDS****FLASH POINT AND METHOD:**

>200 ° F (>93 ° C) (SETAFLASH)

FLAMMABLE LIMITS % VOLUME IN AIR

LOWER: 0.8 UPPER: NOT AVAILABLE

EXTINGUISHING MEDIA

USE WATER FOG, CARBON DIOXIDE (CO₂), DRY CHEMICAL, ALCOHOL FOAM. WATER OR FOG MAY CAUSE FROTHING WHICH CAN BE VIOLENT, ESPECIALLY IF SPRAYED INTO CONTAINERS OF HOT OR BURNING LIQUID.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE-EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARD

DELAYED LUNG DAMAGE (PULMONARY EDEMA) CAN BE EXPERIENCED AFTER EXPOSURE TO COMBUSTION PRODUCTS, SOMETIMES HOURS AFTER THE EXPOSURE. NITROGEN OXIDES AND NITROGEN CONTAINING ORGANIC COMPOUNDS MAY BE RELEASED UPON COMBUSTION. SEE SECTION XII.

SECTION IX**REACTIVITY**

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

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SECTION IX (REACTIVITY CONT.)**CONDITIONS AND MATERIALS TO AVOID:**

AVOID HEAT, FLAME AND CONTACT WITH STRONG OXIDIZING AGENTS. CAN REACT VIGOROUSLY WITH STRONG OXIDIZING AGENTS, STRONG LEWIS OR MINERAL ACIDS, AND STRONG MINERAL AND ORGANIC BASES, ESPECIALLY PRIMARY AND SECONDARY ALIPHATIC AMINES. REACTIONS WITH SOME CURING AGENTS MAY PRODUCE CONSIDERABLE HEAT.

HAZARDOUS DECOMPOSITION PRODUCTS:

NITROGEN OXIDES, CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

SECTION X**EMPLOYEE PROTECTION****RESPIRATORY PROTECTION**

DO NOT BREATHE VAPOR / MISTS. IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVER EXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER A FULL-FACE, ATMOSPHERE-SUPPLYING RESPIRATOR OR AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

PROTECTIVE CLOTHING

DO NOT GET IN EYES. WEAR CHEMICAL GOGGLES IF THERE IS A POTENTIAL CONTACT WITH EYES. DO NOT GET ON SKIN. ON CLOTHING. WEAR CHEMICAL-RESISTANT PROTECTIVE CLOTHING SUCH AS GLOVES, OTHER CLOTHING OR APRON, OVERSHOES AND A FACE-SHIELD SUITABLE TO POTENTIAL EXPOSURE.

ADDITIONAL PROTECTIVE MEASURES

USE VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS. EYE WASH FOUNTAINS AND SAFETY SHOWERS SHOULD BE AVAILABLE FOR EMERGENCY USE.

SECTION XI**ENVIRONMENTAL PROTECTION****SPILL OR LEAK PROCEDURES**

DANGER, CORROSIVE. PREVENT ALL BODILY CONTACT WITH SPILL MATERIAL. WEAR APPROPRIATE RESPIRATOR AND FULL-BODY PROTECTIVE CLOTHING. •SMALL SPILLS• SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL AND PLACE IN NON-LEAKING CONTAINER AND SEAL TIGHTLY FOR PROPER DISPOSAL.

SECTION XII**SPECIAL PRECAUTIONS**

DANGER! CORROSIVE EXTREMELY IRRITATING TO THE EYES. MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION AND SENSITIZATION. CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, CAN CONTAIN HAZARDOUS PRODUCT RESIDUES. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, APPLYING COSMETIC, OR USING TOILET FACILITIES. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. CONTAMINATED LEATHER ARTICLES INCLUDING SHOES CANNOT BE DECONTAMINATED AND SHOULD BE DESTROYED TO PREVENT REUSE.

HEATING THIS CURING AGENT IN THE PRESENCE OF AIR MAY CAUSE THERMAL AND OXIDATIVE DECOMPOSITION. WITH SOME EPOXY RESINS, IT MAY PRODUCE EXOTHERMIC REACTIONS WHICH IN LARGE MASSES CAN CAUSE RUNAWAY POLYMERIZATION AND CHARRING OF THE REACTANTS. FUMES AND VAPORS FROM THE THERMAL AND CHEMICAL DECOMPOSITIONS VARY WIDELY IN COMPOSITION AND TOXICITY. **DO NOT BREATHE FUMES.** USE A NIOSH-APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVER EXPOSURE. IN ACCORD WITH 29 CFR 1910.134, USE EITHER A ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

STORE IN A COOL, DRY PLACE WITH ADEQUATE VENTILATION. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES. MISUSE OF EMPTY CONTAINERS CAN BE HAZARDOUS. CUTTING OR WELDING OF EMPTY CONTAINERS MIGHT CAUSE FIRE, EXPLOSION OR TOXIC FUMES FROM RESIDUES. DO NOT PRESSURIZE CONTAINERS TO EMPTY THEM.

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SECTION XIII TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:
CLASS 8 (CORROSIVE MATERIAL), III

THE DOT INFORMATION IN THIS SECTION IS BASED UPON AN EVALUATION OF THE PRODUCT AGAINST THE REQUIREMENTS OF 49 CFR 172 AND 173 AS REVISED BY HM-181.

D.O.T. PROPER SHIPPING NAME:
POLYALKYLAMINES, N.O.S. (CONTAINS N-AMINOETHYL PIPERAZINE)

OTHER REQUIREMENTS:

UN2735, GUIDE 60. THIS PRODUCT CONTAINS NONYL PHENOL WHICH IS A MARINE POLLUTANT UNDER 49 CFR 172.101, APPENDIX B.

SECTION XIV OTHER REGULATORY CONTROLS

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA /TSCA INVENTORY OF CHEMICAL SUBSTANCES.

PROTECTION OF STRATOSPHERE OZONE (PURSUANT TO SECTION 611 OF THE CLEAN AIR ACT AMENDMENTS OF 1990): PER CFR PART 82. THIS PRODUCT DOES NOT CONTAIN NOR WAS IT DIRECTLY MANUFACTURED WITH ANY CLASS I OR CLASS II OZONE DEPLETING SUBSTANCE.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE ATTACHED ENVIRONMENTAL DATA SHEET (EDS) SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV STATE REGULATORY INFORMATION

THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCTS SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

STATE LISTED COMPONENT	PERCENT	STATE CODE
N-AMINOETHYL PIPERAZINE (CAS NO:140-31-8)	*	CA, CT, FL, LA, MA, NJ, PA
NONYL PHENOL (CAS NO: 84852-15-3)	*	CA, FL, MA, PA
DIETHYLENETRIAMINE (CAS NO: 111-40-0)	<2	CA, FL, IL, LA, MA, ME, MN, NJ, PA, RI

THE SPECIFIC PROPORTION OF THIS COMPONENT IS CONSIDERED TRADE SECRET INFORMATION.

REGULATORY INFORMATION: (NOT MEANT TO BE ALL-INCLUSIVE--SELECTED REGULATIONS REPRESENTED).

NOTICE: THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT AS OF THE EFFECTIVE DATE SHOWN ABOVE. HOWEVER, HUGHES ASSOCIATES MAKES NO WARRANTY, EXPRESS OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. HUGHES ASSOCIATES ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN. REGULATORY REQUIREMENTS ARE SUBJECT TO CHANGE AND MAY DIFFER FROM ONE LOCATION TO ANOTHER; IT IS THE BUYER'S RESPONSIBILITY TO ENSURE THAT ITS ACTIVITIES COMPLY WITH FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS. THE SPECIFIC INFORMATION HEREIN IS MADE FOR THE PURPOSE OF COMPLYING WITH NUMEROUS FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS AND REGULATIONS. SEE MSDS SHEET FOR HEALTH AND SAFETY INFORMATION.

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